

# Draft 2016 Vermont Stormwater Management Manual

## Comments

### City of Burlington

Thank you for the opportunity to comment on this draft of the Vermont Stormwater Management Manual 2.0. While we anticipated having additional comments at future stages of the rule making process as we continue to familiarize ourselves further with Volume 1 and the recently released Volume 2, we hope that the comments below assist you in preparing for a Rulemaking draft.

#### General Comments

- Well done, getting us this far!
- In my experience, Q is typically the designation for FLOW ( $Q=AV$ ). When used to represent a runoff depth etc., I believe it usually has a subscript such as  $Q_d$ .
- Consider including H/H modeling best practices, such as requiring the separate routing of flow from connected impervious vs. pervious areas to avoid making impervious “disappear” in a site with a large “site area.”

#### Treatment Standards

- For challenging sites, the Agency should consider looking at the TSS 85% and TP 50% removal rates on a SITE basis not a per practice basis. For instance, there could be sites where some portion of the site could be directed towards infiltration and thus achieve very high removal rates, but then another portion of the site can't be directed towards infiltration but might be directed towards a proprietary practice that doesn't get 85%/50%. In this case, the SITE might be able to meet an overall TSS 85% and TP 50% standard, even if not all impervious is draining to a VSMM manual approved practice. This may be similar to the allowances covered under redevelopment on page 2-17.
- Please consider whether or not a TSS removal efficiency of 85% and TP removal efficiency of 50% are necessary for ROOF runoff which has generally low TSS and TP removal rates. Burlington has situations in which substantially sized roofs could be disconnected from the combined sewer, but if these are considered “NEW” separate stormwater discharges and the roof water has to receive full treatment – separation is greatly dis-incentivized. This may also be helpful with tight urban redevelop sites.
- What about a redevelopment situation where someone is converting a gravel parking lot (HIGH TSS and P) to a paved parking lot. Can the elimination of a high loading source (compacted gravel) be considered a water quality improvement?
- The site balancing procedure should be codified in the manual and not require an individual permit.
- Consideration of NET NEW impervious vs. requiring treatment of all “New-new” should be included in the manual to encourage removal of impervious on expansion sites.
- Currently, the Draft Manual states for redevelopment that “A STP shall be designed to capture and treat 50% of the WQv from the redeveloped impervious area...” While this is an improvement over previous standards it is important to note that this statement may be interpreted in two separate ways as described below.
  - Re-development may capture and treat half of the contributing impervious area to the full 1” WQV event or,
  - Re-development may treat the entire contributing impervious area to a 0.5” event.

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- In recognition that the majority of pollutants are transported at the start of a rain event, otherwise known as the “first flush”, and knowing that the majority of events are less than 0.5” annually it is suggested that re-development be required to treat the entire contributing impervious to a 0.5” event unless shown to be otherwise impractical.
- For the purposes of reviewing/accepting alternative treatment practices, the manual should not only list removal efficiencies (which are greatly dependent on the concentrations in the influent) but also some target maximum effluent concentration. Clean water is hard to get 85% cleaner.

#### §3.0 Post-Construction Soil Depth and Quality

Page 3-21 & 3-22:

- The Post-Construction Soil Depth and Quality language was adopted from the Stormwater Management Manual for Western Washington (BMP T5.13). However, in the Summary Table and Design Guidance, the Agency has modified the language to omit biosolids from the list of sources of organic material. **Why has VTDEC removed biosolids from the organic matter list?** Inclusion of Class A Biosolids would provide a consistent, low cost, and safe source of organic content while reducing the burden of disposal fees on the municipalities that produce it. Due to the currently low market demands for Class A Biosolids, these nutrient rich materials must be landfilled, while manufacturers introduce new sources of phosphorus into the ecosystem through the production of fertilizer.

An engineered topsoil used for reclamation of a disturbed site (e.g. a construction site) requires adequate plant nutrients. Use of an organic form of nitrogen, rather than chemical fertilizer, is preferable, because the latter will immediately leach and/or runoff in large amounts if a significant rain event happens before vegetation is well-established. In contrast, most the nitrogen (and much of the phosphorous) in biosolids (even more than manures) is in organic form and will only become available over time, as microbial action in the soil releases it for plant uptake. Thus, biosolids as the nitrogen source is the *preferred* choice environmentally.

While some biosolids or manure is important in post-construction soil, in order to provide plant nutrients to boost rapid and sustained plant growth to reduce erosion, too much may provide too much nitrogen and thus leaching. Therefore, the Agency should adopt Western Washington’s guidance and permit compost to contain up to 35% Class A Biosolids or manure.

#### §4.0 Acceptable Stormwater Treatment Practices

##### *Post Construction Soil Depth and Quality*

- Consider a certification procedure (with the threat of compliance checks) for assuring compliance with the standard. While we agree with the intent behind the standard and specifications themselves, the current inspection procedures are fairly onerous.
- Consider two tiers with regard to the depth of the top soil layer. Perhaps set some minimum depth (4” or 6” and know you will get 4” – which will be an improvement over existing amendment that has to be met on all sites. Then for sites that pursue enhanced soil restoration

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(through deeper top soil layer), perhaps they get an additional credit – or are able to use an even lower CN (particularly for C/D soils sites)?

- Is tilling the same as scarification?

#### **Page 4-7 (second appearance of this page number, it should be 4-14):**

- Although deep sump catch basins are not approved as pre-treatment for a catch basin-to-catch basin drainage system, has the Agency considered an alternative credit for these types of systems? Encouraging a drainage network of deep sump catch basins would provide for additional sediment storage capacity, which would likely result in the resuspension of less sediment than conventional systems.

#### **Page 4-16 Reforestation vs. Tree Credit**

- Please consider adding a separate Tree (vs. reforestation) credit as meeting the reforestation credit is not feasible in urban areas, yet we want to incentivize sites to plan as many trees as possible. A tree credit could be based on providing some small amount of impervious credit for trees planted with adequate soil volume to support longevity and healthy canopies and which are planted adjacent to and overhanging impervious surface (based on the municipal credits outlined in Stone's Tree Credit white paper). If the Agency is willing to advance this idea, we can provide more details about soil volume requirements. We do not agree with the Agency's position that tree credits are not a viable option because of inspection requirements. If site designers are going to be examining dispersed, individual bio-retention systems and disconnections etc., they can also verify that a "stormwater tree" is still on site.

#### **Page 4-23 Minimum disconnection length**

- The minimum 35' disconnection length is not realistic for many urban sites? At least for A/B soils – it would seem that a disconnection receiving area length/size equal or greater than the length/size of the impervious surface would be more than sufficient especially on slopes much < 8%? What about for walkways, sheds, small rooftops? I don't want to trade being able to disconnect on steeper slopes for being able to use a smaller disconnection receiving area in flat/gently sloped areas, please.

#### **Page 4-87:**

Please remove/modify the following required element to allow for subsurface infiltration (via stormtech chambers or equivalent) underneath paved surfaces:

"Direct access shall be provided to infiltration practices for maintenance and rehabilitation. If a stone reservoir or perforated pipe is used to temporarily store runoff prior to infiltration, the practice shall not be covered by an impermeable surface."

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**Page 4-138:**

“Failure to properly construct and maintain a permeable pavement surface can result in the surface becoming effectively impervious and thus subject to regulation and retrofit treatment requirements.” Once "effectively impervious" what course of action will be taken by the Agency, and in what sort of time frame?

Please feel free to contact me at [mmoir@burlingtonvt.gov](mailto:mmoir@burlingtonvt.gov) or 802-540-1748 with any questions regarding these comments.

Respectfully submitted,



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